

Tuesday, 2/5/2008 11:06:28 AM  
Kim Johnston

## Process Sheet

9

Customer	: CU-DAR001 Dart Helicopters Services	Drawing Name	: A119 BUBBLE WINDOW ASSY
Job Number	: 37199		
Estimate Number	: 12914		
P.O. Number	:	Part Number	: D119755014
This Issue	: 2/5/2008	S.O. No.	:
Prsh: Rev.	: NC	Drawing Number	: D3624 UNDER REVIEW
First Issue	: 1/1	Project Number	: N/A
Previous Run	: 34432	Drawing Revision	: C
		Material	:
Written By	:	Due Date	: 2/25/2008
Checked & Approved By	:	Qty:	3 Um: Each
Comment	: Est A New Issue 6/28/2007 DL		



## Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
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1.0	DC	DOCUMENT CONTROL
-----	----	------------------



Comment: DOCUMENT CONTROL

Photocopy bluefile &amp; type labels per PPP 119-755-014 CHG 001

8/3/19

2.0	PACKAGING 1	PACKAGING RESOURCE #1
-----	-------------	-----------------------



Comment: PACKAGING RESOURCE #1

Pick Packing Kit

3.0	37199A	A119 BUBBLE WINDOW
-----	--------	--------------------



Comment: Sub-Component A119 BUBBLE WINDOW

8/3/19

4.0	D2126	Seal
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Comment: Qty.: 7.4372 f(s)/Unit Total : 22.3115 f(s)

Seal

Batch#

1335281

8/3/19 sep 32

5.0	QC4	INSPECT 100% KITS FOR COMPLETENESS
-----	-----	------------------------------------



Comment: INSPECT 100% KITS FOR COMPLETENESS

8/3/19 43

6.0	PACKAGING 1	PACKAGING RESOURCE #1
-----	-------------	-----------------------



Comment: PACKAGING RESOURCE #1

Identify and pack for shipping as per PPP D119-755-014

Location:

PPP Rev:

Draft 8/3/19 sep 32

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Tuesday, 2/5/2008 11:06:28 AM

User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: A119 BUBBLE WINDOW ASSY

Job Number: 37199

Part Number: D119755014

Job Number:



Seq. #:

Machine Or Operation:

Description :

7.0

QC21

FINAL INSPECTION/W/O RELEASE



③

Comment: FINAL INSPECTION/W/O RELEASE

2008/03/19

Job Completion



POSITIVE RECALL

EFFECTIVE 08.02.12 AUTH GP

RELEASED ADP

DATE

200318

2008/3/19

③

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector





Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

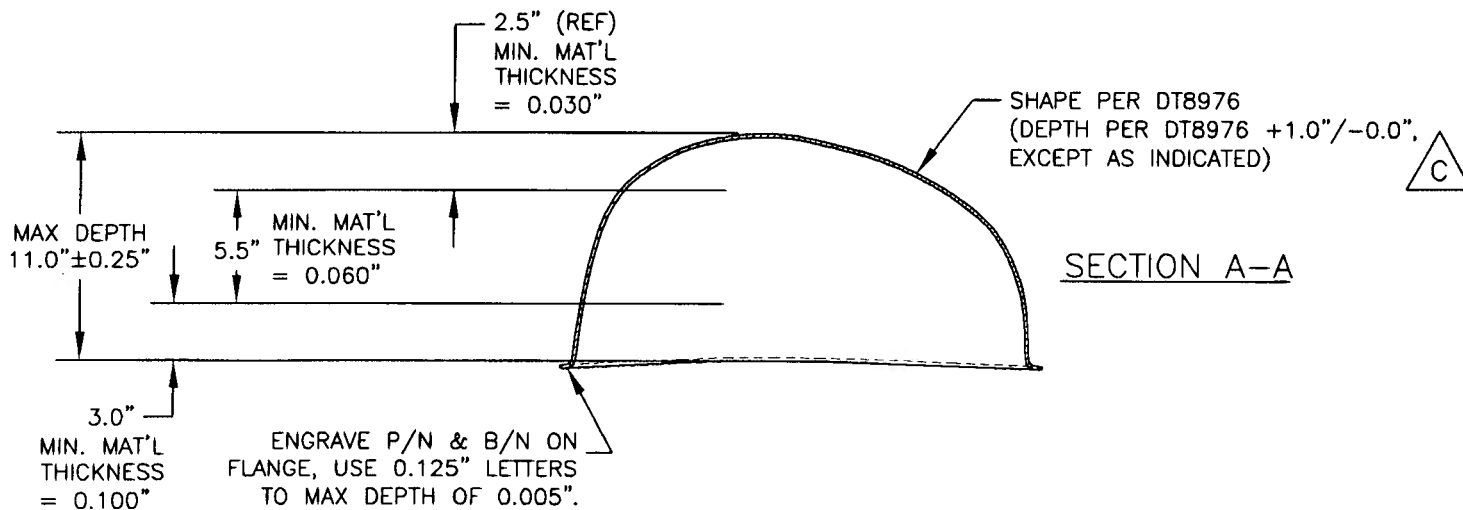
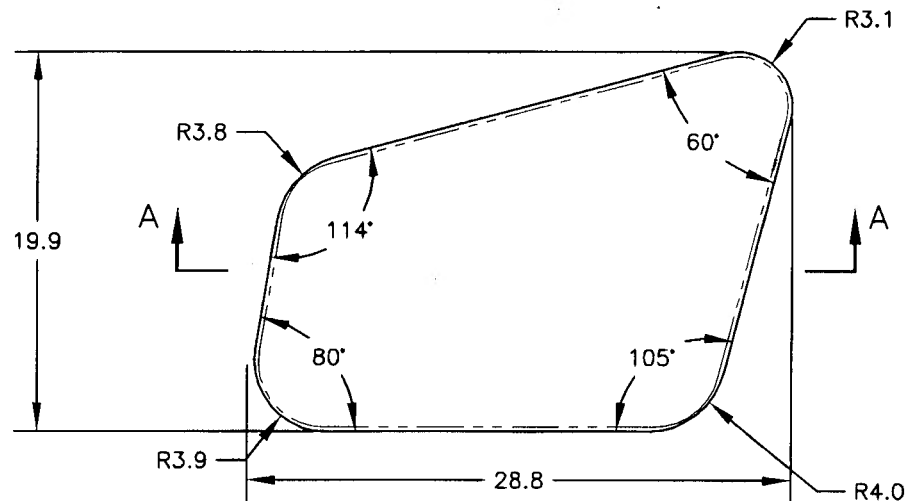
QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

**DART**

DESIGN 	DRAWN BY 	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED 	APPROVED 	DRAWING NO. D3624	REV. C SHEET 1 OF 1
DATE 07.06.27		TITLE BUBBLE WINDOW (A119)	SCALE 1:10
A	07.05.14	NEW ISSUE	
B	07.05.24	11.0" DEPTH WAS 12.0"	
C	07.06.27	ADD TOOL TO CONTROL BUBBLE SHAPE	

**RELEASED**  
07.06.28. #**D3624-2 BUBBLE WINDOW**

1) MATERIAL: POLYCAST II CLEAR ACRYLIC OR PLEXIGLAS "G" CAST ACRYLIC, 0.177" THICK (REF DART SPEC. M-ACRYLIC-S.177)

2) FORM PER DT8953

- FORMING PROCESS:
- (a) DRAPE MAT'L OVER DT8953 MOLD
  - (b) HEAT TO 286°F
  - (c) VACUUM TO SPECIFIED HEIGHT
  - (d) LEAVE FOR AT 2 MINUTES TO COOL
  - (e) TRIM WINDOW PER DT8954

3) ALL DIMENSIONS ARE IN INCHES

4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED

SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 37199

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08.03.17 -2

DART AEROSPACE LTD		WORK ORDER:	
Description: <u>A119 B.L.L.L.</u>		Part Number:	<u>D 3624</u>
Inspection Dwg:	Rev:	Page 1 of 1	

## FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article    ☐ Prototype

(Step 4) Thermoforming  
Visual Inspection Sign-off

Description	Initials
Depth of bubble within tolerances	<u>Wh.</u>
Acceptable shape definition	<u>Wh.</u>
Free of visual flaws (bumps, cracks, voids, etc.)	<u>Wh.</u>

(Step 6) Trimming  
FAI Checklist

Inspect dimensions highlighted on inspection sheet drawing \_\_\_\_\_ Rev. \_\_ and record below

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
depth of bubble 11"	+/- 0.25"	<u>10.775</u>	<input checked="" type="checkbox"/>			<u>10.79</u> <u>✓</u>
leading edge at 3" high	0.095" min thick	<u>0.096</u>	<input checked="" type="checkbox"/>			
leading edge at 8.5" high	0.058" min. thick	<u>0.065</u>	<input checked="" type="checkbox"/>			
trailing edge at 3" high	0.060" min thick	<u>0.084</u>	<input checked="" type="checkbox"/>			
trailing edge at 8.5" high	0.042" min thick	<u>0.053</u>	<input checked="" type="checkbox"/>			
top 2.5" of bubble	0.030" min thick	<u>0.043</u>	<input checked="" type="checkbox"/>			
leading edge angle 92°	+/- 0.2°	<u>92°</u>	<input checked="" type="checkbox"/>			
trailing edge angle 90°	+/- 0.2°	<u>90°</u>	<input checked="" type="checkbox"/>			
width leading edge flange	0.85" min	<u>0.923</u>	<input checked="" type="checkbox"/>			
width trailing edge flange	0.70" min.	<u>0.786</u>	<input checked="" type="checkbox"/>			

Measured by: <u>Wh.</u>	Audited by: <u>Twill Dmyl</u>	Prototype Approval: <u>MP</u>
Date: <u>08.03.17</u>	Date: <u>08.03.17</u>	Date: <u>08.03.18</u>

Rev	Date	Change	Revised by	Approved
		New Issue		

DART AEROSPACE LTD	WORK ORDER: 37199A.
Description: <u>Alt Bubble</u>	Part Number: <u>D3624-2</u>
Inspection Dwg: <u>D3624</u> Rev: <u>C</u>	Page 1 of 1

### FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

(Step 4) Thermoforming  
Visual Inspection Sign-off

Description	Initials
Depth of bubble within tolerances	<i>Pl</i>
Acceptable shape definition	<i>Pl</i>
Free of visual flaws (bumps, cracks, voids, etc.)	<i>Pl</i>

(Step 6) Trimming  
FAI Checklist

Inspect dimensions highlighted on inspection sheet drawing D3624 Rev.    and record below

Drawing	Tolerance	Actual	Accept	Reject	Method of	Comments
Dimension		Dimension			Inspection	
depth of bubble 11"	+/- 0.25"	<u>10.45</u>	<input checked="" type="checkbox"/>			<i>Pl</i>
leading edge at 3" high	0.095" min thick	<u>0.099</u>	<input checked="" type="checkbox"/>			<i>Pl</i>
leading edge at 8.5" high	0.058" min. thick	<u>0.070</u>	<input checked="" type="checkbox"/>			<i>Pl</i>
trailing edge at 3" high	0.060" min thick	<u>0.089</u>	<input checked="" type="checkbox"/>			<i>Pl</i>
trailing edge at 8.5" high	0.042" min thick	<u>0.054</u>	<input checked="" type="checkbox"/>			<i>Pl</i>
top 2.5" of bubble	0.030" min thick	<u>0.045</u>	<input checked="" type="checkbox"/>			<i>Pl</i>
leading edge angle 92°	+/- 0.2°	<u>93°</u>	<input checked="" type="checkbox"/>			<i>Pl</i>
trailing edge angle 90°	+/- 0.2°	<u>90°</u>	<input checked="" type="checkbox"/>			<i>Pl</i>
width leading edge flange	0.85" min	<u>0.918</u>	<input checked="" type="checkbox"/>			
width training edge flange	0.70" min.	<u>0.774</u>	<input checked="" type="checkbox"/>			<i>Re-measured</i>

Measured by: <i>Pl</i>	Audited by: <i>Pl</i>	Prototype Approval: <i>Pl</i>
Date: <u>08.03.17</u>	Date: <u>08.03.17</u>	Date: <u>08.03.17</u>

Rev	Date	Change	Revised by	Approved
		New Issue		

DART AEROSPACE LTD		WORK ORDER: 37199A
Description: 119 Bubble		Part Number: D 3624-2
Inspection Dwg: D 3624 Rev: C		Page 1 of 1

### FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article    ☐ Prototype

(Step 4) Thermoforming  
Visual Inspection Sign-off

Description	Initials
Depth of bubble within tolerances	DA
Acceptable shape definition	DA
Free of visual flaws (bumps, cracks, voids, etc.)	DA

### (Step 6) Trimming FAI Checklist

Inspect dimensions highlighted on inspection sheet drawing \_\_\_\_\_ Rev. \_\_ and record below

Drawing	Tolerance	Actual	Accept	Reject	Method of	Comments
Dimension		Dimension			Inspection	
depth of bubble 11"	+/- 0.25"	10.78	✓			
leading edge at 3" high	0.095" min thick	0.096	✓			
leading edge at 8.5" high	0.058" min. thick	0.063	✓			
trailing edge at 3" high	0.060" min thick	0.087	✓			
trailing edge at 8.5" high	0.042" min thick	0.056	✓			
top 2.5" of bubble	0.030" min thick	0.048	✓			
leading edge angle 92°	+/- 0.2°	92°	✓			
trailing edge angle 90°	+/- 0.2°	90°	✓			
width leading edge flange	0.85" min	0.902	✓			
width training edge flange	0.70" min.	0.725	✓			

Measured by: DA
Date: 08.03.17

Audited by: [Signature]
Date: 08.03.17

Prototype Approval: [Signature]
Date: 08.03.17

Rev	Date	Change	Revised by	Approved
		New Issue		



# Receiving Report

Date: 8/3/3

Batch No: N167291

Supplier: SABIC

Dart P/O: 5808

Packing Slip: Yes ☒ No ☐  
 Invoice: Yes ☐ No ☒  
 Receipt: Cash ☐ Cr ☒

Release Note Attached: Yes ☒ No ☐ N/A ☐  
 Waybill Attached: Yes ☒ No ☐  
 Shipment Complete: Yes ☒ No ☐ N/A ☐  
 QC6 Inspection 08/03/03 N/A ☒  
 Work Order ☐ N/A ☒

## Discrepancies

Part Number	Description	Quantity Ordered	Quantity Received	Quantity Returned	Quantity Short	Comments

Initials of receiver (if shipment OK) Level 12 [Signature]

Production/Admin: 08/03/04  
 Date RLP 7/16/9  
 Received/Costing CA  
 Initial

Location \_\_\_\_\_

H:\FORMS\Purchasing\approved purch\RECREPORT Rev D

\*\*\*\*\*  
 \*\*\* IF YOU ARE NOT CURRENTLY RECEIVING OUR INVOICES \*\*\*  
 \*\*\* VIA EMAIL OR FAX, PLEASE SUPPLY US WITH AN EMAIL \*\*\*  
 \*\*\* ADDRESS OR FAX NUMBER . FAX TO 905-789-3161 \*\*\*  
 \*\*\*\*\*  
 \*

PLEASE Remit To: SABIC Polymershapes 9150 Airport Road Brampton ON L6S 6G1

Phn : (905) 789-3100 Fax : (905) 789-3131

NO GOODS TO BE RETURNED WITHOUT APPROVAL FROM US. ALL DISCREPANCIES MUST BE REPORTED WITHIN 3 DAYS.

BIC

Polymershapes

RECEIVED MAR 04 2008

سابك  
sabic

INVOICE NO.	T211861/M
INVOICE DATE	28.02.08
TAKEN BY	daya
G.S.T. REG. NO.	88211 6213
CARRIER	

## INVOICE

BILL TO: DART AEROSPACE LTD

SHIP TO: DART AEROSPACE LTD

1270 ABERDEEN STREET  
HAWKESBURY ON K6A 1K7  
Canada1270 ABERDEEN STREET  
HAWKESBURY ON K6A 1K7  
Canada

A/C 22.16

CUSTOMER DARAER	SHIP VIA EPIC	TAX LIC 1 CHARGE GST	TAX LIC 2 6112-5207	INVOICE TERMS NET 30 DAYS	SALES ORDERPAGE T08484	WHS. 1 92
CUSTOMER P.O. 5808	SHIP DATE 28.02.08	FREIGHT TERMS PREPAID + CHARGE	SALES REP. WADE DIXON	S.D.N. 01	BILL OF LADING 439-040965	Sch. Date 28.02.08
						Sales Office 92

LN	PRODUCT	ORDER	B/O	SHIP	SKU	DESCRIPTION	PRICE	PER	EXTENSION
001	10100655	6	0	6	EA	GM - CLEAR .177 X 48 X 96	1 125.00	EA	750.00
002	0000005	1	0	1	EA	THANK YOU FOR SELECTING SABIC POLYMERSHAPES C.O.C. REQUIRED C.O.C. REQUIRED PLEASE FAX TO CHANTAL 613-632-1053 DO NOT SHIP BEFORE FEB 28TH FREIGHT GST PAYABLE @ 5%  PLEASE PAY THIS AMOUNT	1 .00	EA	0.00
									50.00
									40.00
									840.00
									=====

\*\*\*\*\*  
 \*\*\* IF YOU ARE NOT CURRENTLY RECEIVING OUR INVOICES \*\*\*  
 \*\*\* VIA EMAIL OR FAX, PLEASE SUPPLY US WITH AN EMAIL \*\*\*  
 \*\*\* ADDRESS OR FAX NUMBER . FAX TO 905-789-3161 \*\*\*  
 \*\*\*\*\*

PLEASE Remit To: SABIC Polymershapes 9150 Airport Road Brampton ON L6S 6G1  
Phn : (905) 789-3100 Fax : (905) 789-3131

NO GOODS TO BE RETURNED WITHOUT APPROVAL FROM US. ALL DISCREPANCIES MUST BE REPORTED WITHIN 3 DAYS.

Aerospace Ltd

Receiving Slip

Date  
Jul 23, 2007

Page

Receipt Number  
RCP00005164

Aerospace Ltd  
10 Aberdeen St  
Hawksbury, Ontario K6A 1K7  
Phone: (613) 632-3336  
Fax: (613) 632-4443

REFERENCE ONLY

Purchase From:

REFERENCE ONLY

G E Polymershapes  
9150 Airport Road  
Brampton, ON L6S 6G1  
Canada

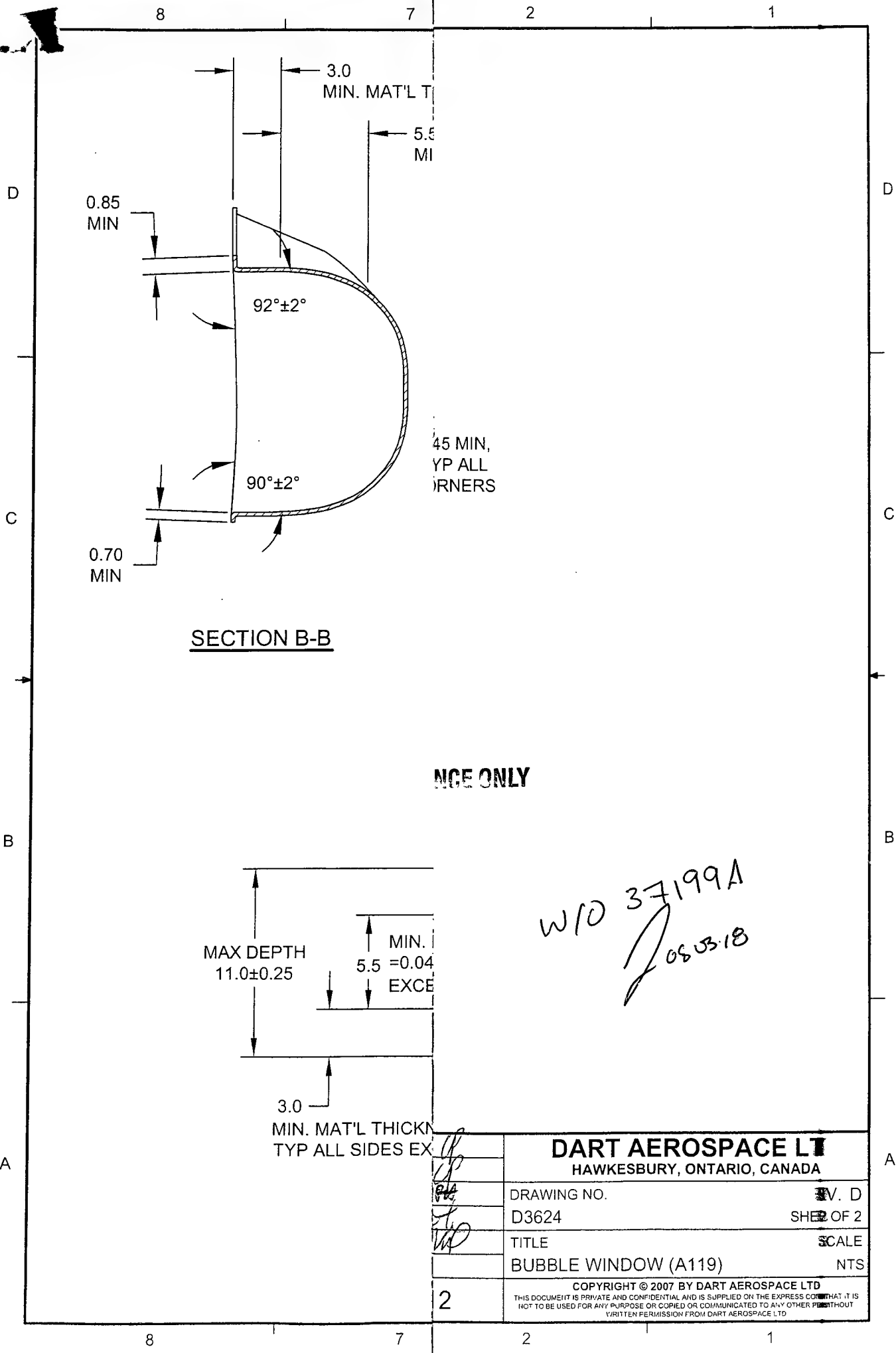
Ship To:

Main Finished Goods Location  
Dart Aerospace Ltd  
1270 Aberdeen St  
Hawksbury, Ontario K6A 1K7

Reference	Description	Contact	Vendor Number	PO Number
			VC-GEP001	PO00004226

Vendor Item Number	Item Number	Description	Qty. Received	UOM	Unit Cost	Extended Cost	Arrival Date
	MACRYLICS177	0.177" PLEXIGLAS G CL OR PLEXIGLASS "G" CAST ACRYLIC MATERIAL: POLYCAST II CLEAR ACRYLIC PER MIL-P-5425 B/N105075	248.0000	sf	3.900000	967.20	Jul 23, 2007
		REFERENCE ONLY					
		REFERENCE ONLY					
		REFERENCE ONLY					
		REFERENCE ONLY					
		REFERENCE ONLY					

Comments:



SECTION B-B

NGE ONLY

W/D 37199A  
2003.18

<p>2</p>	<p><b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA</p>	
	<p>DRAWING NO. D3624</p>	<p>REV. D SHEET 2 OF 2</p>
	<p>TITLE BUBBLE WINDOW (A119)</p>	<p>SCALE NTS</p>
	<p><small>COPYRIGHT © 2007 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD</small></p>	

Date: 2/5/2008 11:06:28 AM  
User: Kim Johnston

## Process Sheet

9

Customer	: CU-DAR001 Dart Helicopters Services	Drawing Name	: A119 BUBBLE WINDOW ASSY
Job Number	: 37199		
Estimate Number	: 12914		
P.O. Number	:	Part Number	: D119755014
This Issue	: 2/5/2008 S.O. No. :	Drawing Number	: D3624 UNDER REVIEW
Prsht Rev.	: NC	Project Number	: N/A
First Issue	: / / Type : THERMOFORMING	Drawing Revision	: C
Previous Run	: 34432	Material	:
Written By	:	Due Date	: 2/25/2008 Qty: 3 Um: Each
Checked & Approved By	:		
Comment	: Est A New Issue 6/28/2007 DL		

## Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
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1.0	DC	DOCUMENT CONTROL
-----	----	------------------



Comment: DOCUMENT CONTROL

Photocopy bluefile &amp; type labels per PPP 119-755-014 CHG 001

08 02 12

2.0	PACKAGING 1	PACKAGING RESOURCE #1
-----	-------------	-----------------------



Comment: PACKAGING RESOURCE #1

Pick Packing Kit

3.0	37199A	A119 BUBBLE WINDOW
-----	--------	--------------------



Comment: Sub-Component A119 BUBBLE WINDOW

4.0	D2126	Seal
-----	-------	------



Comment: Qty.: 7.4372 f(s)/Unit Total : 22.3115 f(s).

Seal

Batch# \_\_\_\_\_

REFERENCE ONLY

5.0	QC4	INSPECT 100% KITS FOR COMPLETENESS
-----	-----	------------------------------------



Comment: INSPECT 100% KITS FOR COMPLETENESS

6.0	PACKAGING 1	PACKAGING RESOURCE #1
-----	-------------	-----------------------



Comment: PACKAGING RESOURCE #1

Identify and pack for shipping as per PPP D119-755-014

Location: \_\_\_\_\_

PPP Rev: \_\_\_\_\_

Date: Tuesday, 2/5/2008 11:06 30 AM  
 User: Kim Johnston

## Process Sheet

Customer : CU-DAR001 Dart Helicopters Services Drawing Name : A119 BUBBLE WINDOW  
 Job Number : 37199A  
 Estimate Number : 12911  
 P.O. Number :  
 This Issue : 2/5/2008 S.O. No. :  
 Prsht Rev. : NC Part Number : D36242  
 First Issue : 1/1 Type : THERMOFORMING Drawing Number : D3624 UNDER REVIEW  
 Previous Run : 34996 Drawing Revision : REV. 0  
 Material :  
 Due Date : 2/25/2008 Qty: 4 Um: Each  
 Written By :  
 Checked & Approved By :  
 Comment : Est. A Thermoform in house 6/27/2007 DL  
 Est B. Revised due to corrupt operating Program. 7/23/2007 DL

## Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
10	MACRYLICS177	0.177" PLEXIGLAS G CLEAR CAST ACRYLIC SH

Comment: Qty.: 10.0000 sf(s)/Unit Total : 30.0000 sf(s)  
 0.177" PLEXIGLAS G CLEAR CAST ACRYLIC SH

1) Batch # M105075 / M107291

M107291

Dh. 08.03.17 (x5)

Dh. 08.03.11 (x1)

Dh. 08.02.21 (x4)

2.0	HAND FINISH TH	HAND FINISHING THERMOFORMING
-----	----------------	------------------------------

Comment: HAND FINISHING THERMOFORMING

1) Cut Blanks to 30" by 48"

Dh. 08.03.17 (x5)

Dh. 08.03.11 (x2)

Dh. 08.02.21 (x4)

3.0	THERMOFORMING	THERMOFORMING MACHINE
-----	---------------	-----------------------

Comment: THERMOFORMING MACHINE

Thermoform as per Dwg. D3624 and Folio FTA 004

Dwg. Rev. C

Folio Rev. E

Dh. 08.03.17 (x5)

Dh. 08.03.11 (x4)

Dh. 08.02.21 (x4)

4.0	QC2	INSPECT PARTS AS THEY COME OFF MACHINE
-----	-----	--

Comment: INSPECT PARTS AS THEY COME OFF MACHINE

1) Check Surface finish for undesired marks, voids, dimples etc.

2) Check depth of bubble to ensure conformity to drawing tolerances.

Dh. 08.03.17 (x3)

Dh. 08.03.11 (x1)

Dh. 08.02.21 (x4)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Tuesday, 2/5/2008 11:06:30 AM  
User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: A119 BUBBLE WINDOW

Job Number: 37199A

Part Number: D36242

Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0

HAND FINISH TH

HAND FINISHING THERMOFORMING



Comment: HAND FINISHING THERMOFORMING

- 1) Trim to Finished Dimensions
- 2) Buff out any light scratches or blemishes
- 3) Etch in part number and batch number

Wh 08.03.18 (X3)  
Wh 08.03.11 (X2)  
Al. 08.02.21 (X4)

6.0

QC2

INSPECT PARTS AS THEY COME OFF MACHINE



Batch 105075  
STRUCTURAL TEST.



Wh 08.03.18 (X3)  
- Wh 08.03.18  
- Wh 08.03.11 - PRO-

Comment: INSPECT PARTS AS THEY COME OFF MACHINE

Batch 107291 - TEST

7.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

- 1) Visually inspect for clarity, and proper formation.

Wh 08.03.18 (3)

8.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

8/3/19 SU (3)

9.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

Wh 08.03.18 (3)  
2008/03/19

Job Completion



2008/3/19 (3)



# Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: 23624-2 PAR #: N/A Fault Category: Prod / Manufacturing NCR: Yes No DQA: 1 Date: 08/03/19  
 QA: N/C Closed: 1 Date: 08/03/19

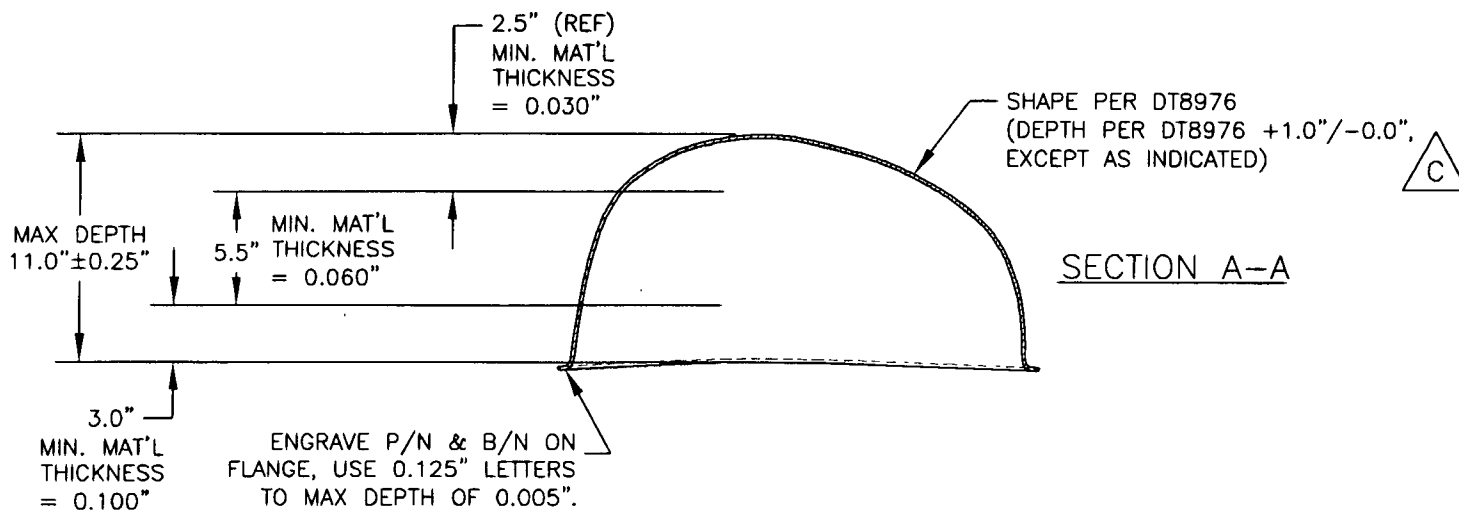
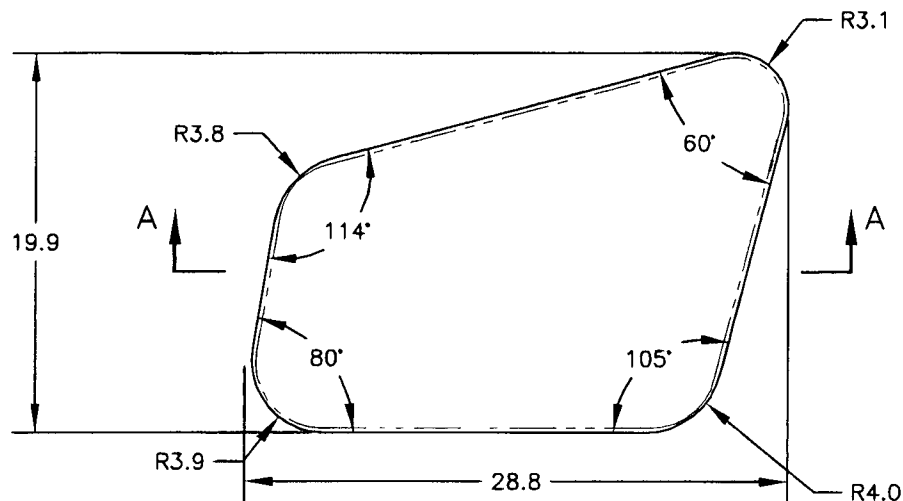
NCR: <u>37199A</u>		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
<del>08.02.28</del>	6.	Parts trimmed wrong. x4, Batch 105075 Did not pass testing.		Destroy & Replace.	dt. 08.02.28			
<del>08.03.11</del>	6.	Parts used for structural testing x2. Both 02281		Destroy and replace unit (did not pass) retain unit R&D. passed.	dt. 08.03.11 dt. 08.03.14			
08.03.17	3	Parts pulled out of clamps x2		for reference. Scrap, 2 parts	wh. 08.03.17			

NOTE: Date & initial all entries



DESIGN	gp	DRAWN BY	gp	DART AEROSPACE LTD	
				HAWKESBURY, ONTARIO, CANADA	
CHECKED	#	APPROVED	#	DRAWING NO.	REV. C
				D3624	SHEET 1 OF 1
DATE	07.06.27			TITLE	SCALE
				BUBBLE WINDOW (A119)	1:10
A	07.05.14			NEW ISSUE	
B	07.05.24			11.0" DEPTH WAS 12.0"	
C	07.06.27			ADD TOOL TO CONTROL BUBBLE SHAPE	

RELEASED  
07.06.28



#### D3624-2 BUBBLE WINDOW

1) MATERIAL: POLYCAST II CLEAR ACRYLIC OR PLEXIGLAS "G" CAST ACRYLIC, 0.177" THICK  
(REF DART SPEC. M-ACRYLIC-S.177)

2) FORM PER DT8953

- FORMING PROCESS:
- (a) DRAPE MAT'L OVER DT8953 MOLD
  - (b) HEAT TO 286°F
  - (c) VACUUM TO SPECIFIED HEIGHT
  - (d) LEAVE FOR AT 2 MINUTES TO COOL
  - (e) TRIM WINDOW PER DT8954

3) ALL DIMENSIONS ARE IN INCHES

4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED

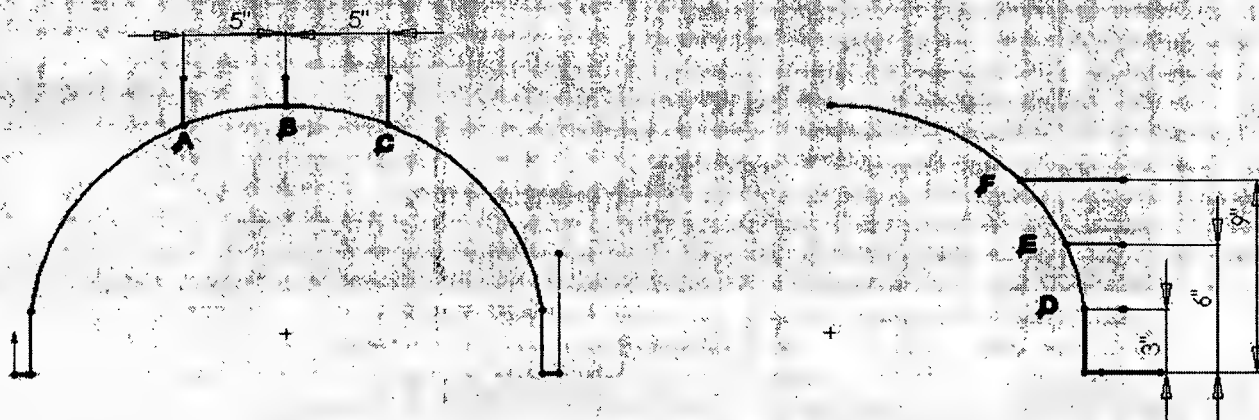
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NO. 37199A

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**DART****D3624-2 DIM SHEET**

	WO# 37199A #1	TEST FLIGHT(REF)	RETURN (REF)
A	.049	0.051	0.078
B	.046	0.034	0.058
C	.054	0.038	0.039
D	.085	0.095	0.06
E	.065	0.082	0.052
F	.059	0.065	0.059

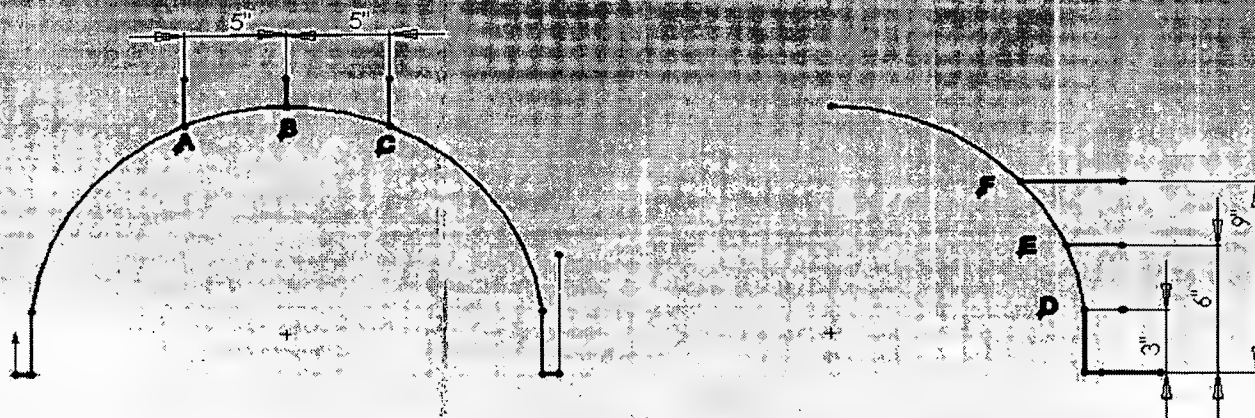
**DART****D3624-2 DIM SHEET**

	W0#37199 #2.	TEST FLIGHT(REF)	RETURN (REF)
A	.048	0.051	0.078
B	.042	0.034	0.058
C	.048	0.038	0.039
D	.085	0.095	0.06
E	.064	0.082	0.052
F	.060	0.065	0.059

M105075 #3

# DART

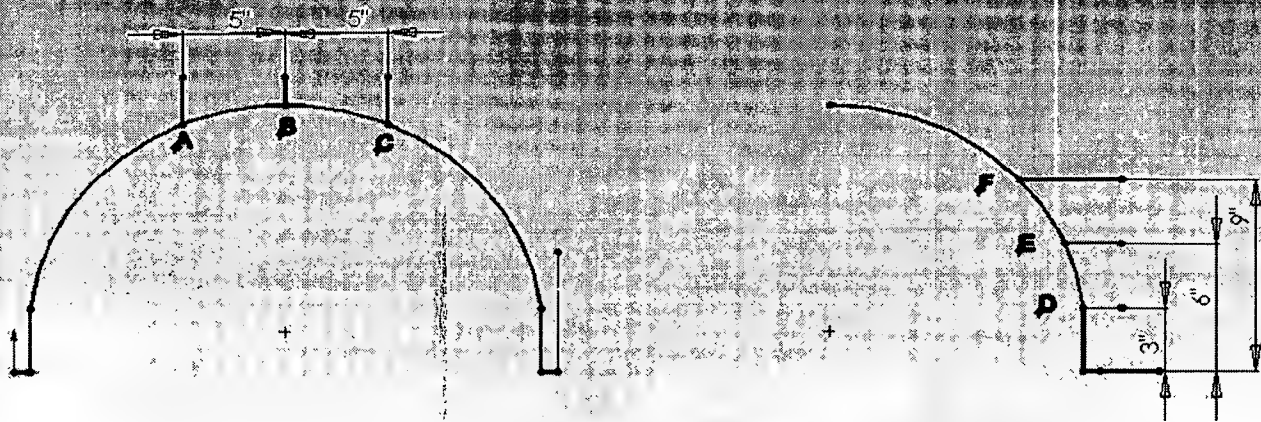
## D3624-2 DIM SHEET



	W0#37199 #3	TEST FLIGHT(REF)	RETURN (REF)
A	1054	0.051	0.078
B	1046	0.034	0.058
C	1048	0.038	0.039
D	1080	0.095	0.06
E	1065	0.082	0.052
F	1064	0.065	0.059

# DART

## D3624-2 DIM SHEET

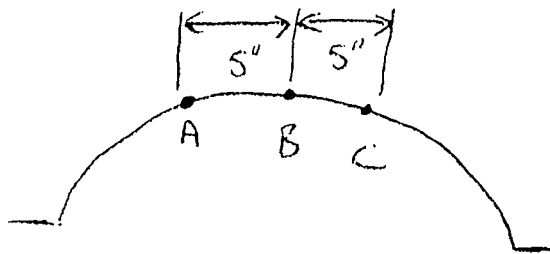


	W037199 #4	TEST FLIGHT(REF)	RETURN (REF)
A	.054	0.051	0.078
B	.046	0.034	0.058
C	.051	0.038	0.039
D	.090	0.095	0.06
E	.070	0.082	0.052
F	.060	0.065	0.059

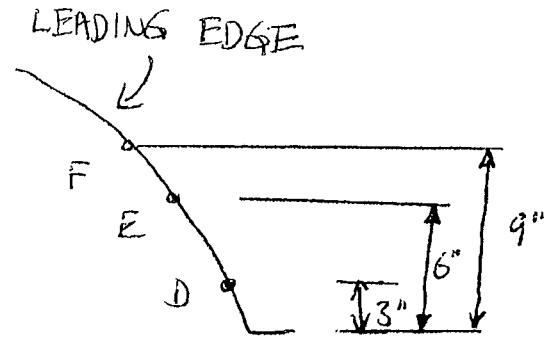
**DART**

D3624-1

Batch 105075



SIDE VIEW



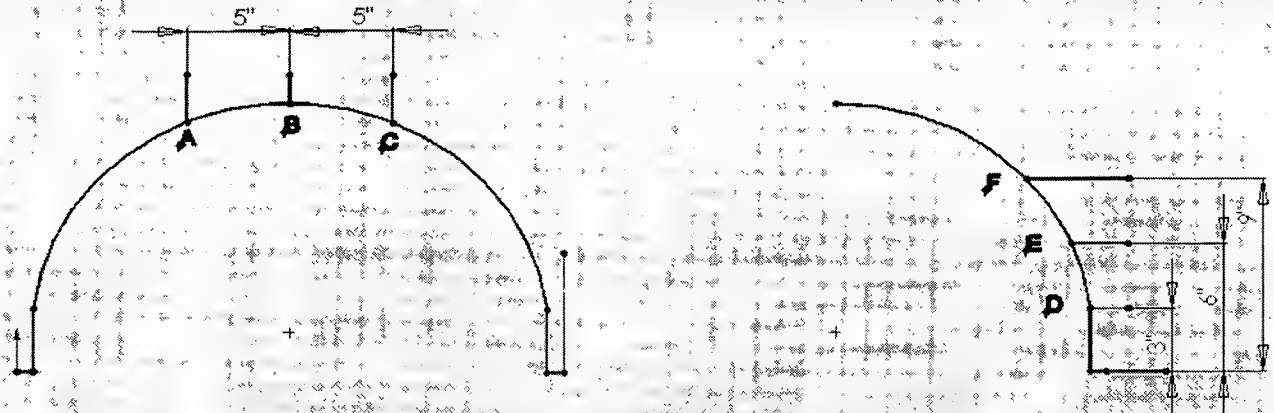
TOP VIEW

	TEST FLIGHT PROTO (REF)	RETURNED (REF)	300° <del>32199</del> M105075 (1)	290° <del>37199</del> M105075 (2)	285° <del>37199</del> M105075 (3)	287° <del>32199</del> M105075 (4)
A	0.051	0.078	.049	.048	.054	0.054
B	0.034	0.058	.046	.042	.046	0.046
C	0.038	0.039	.054	.048	.048	0.051
D	0.095	0.060	.085	.085	.080	0.090
E	0.082	0.052	.065	.064	.065	0.070
F	0.065	0.059	.059	.060	.064	0.060

M 107291  
08.03.14.

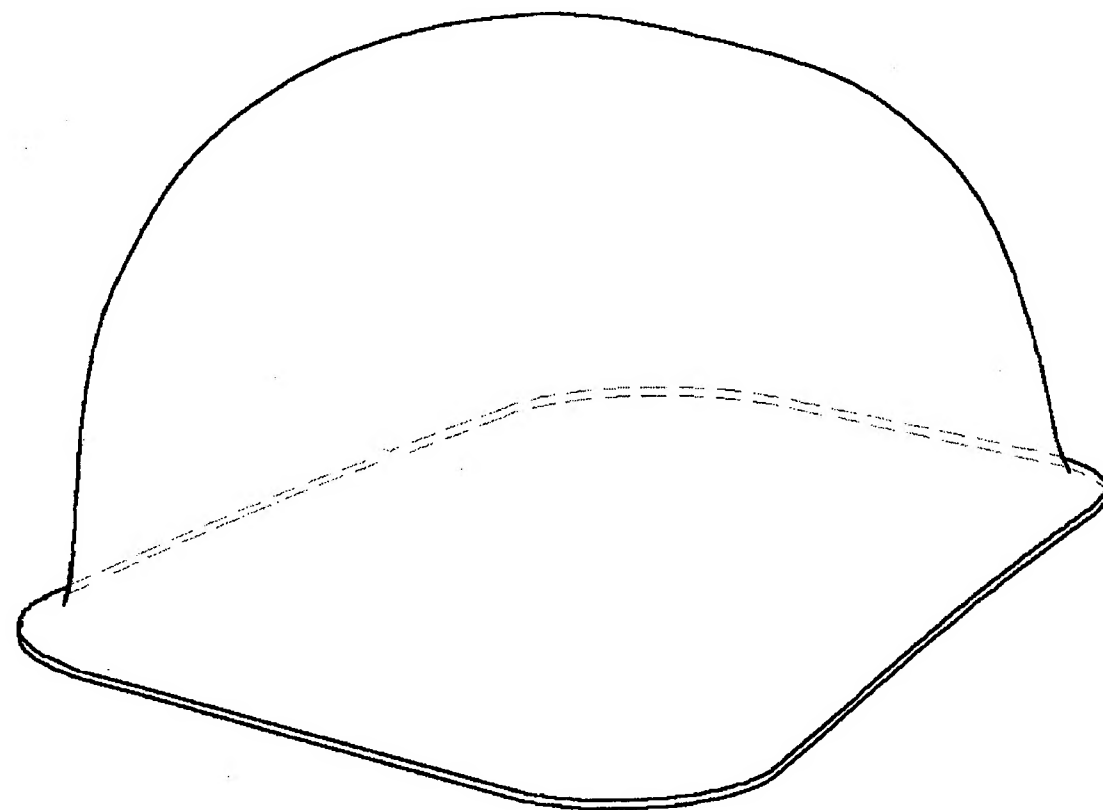
# DART

## D3624-2 DIM SHEET



		TEST FLIGHT(REF)	RETURN (REF)
A	48 0.047	0.051	0.078
B	40 0.043	0.034	0.058
C	48 0.044	0.038	0.039
D	100 0.066	0.095	0.06
E	81 0.055	0.082	0.052
F	66 0.044	0.065	0.059





D3624-2 BUBBLE WINDOW

**NOTES:**

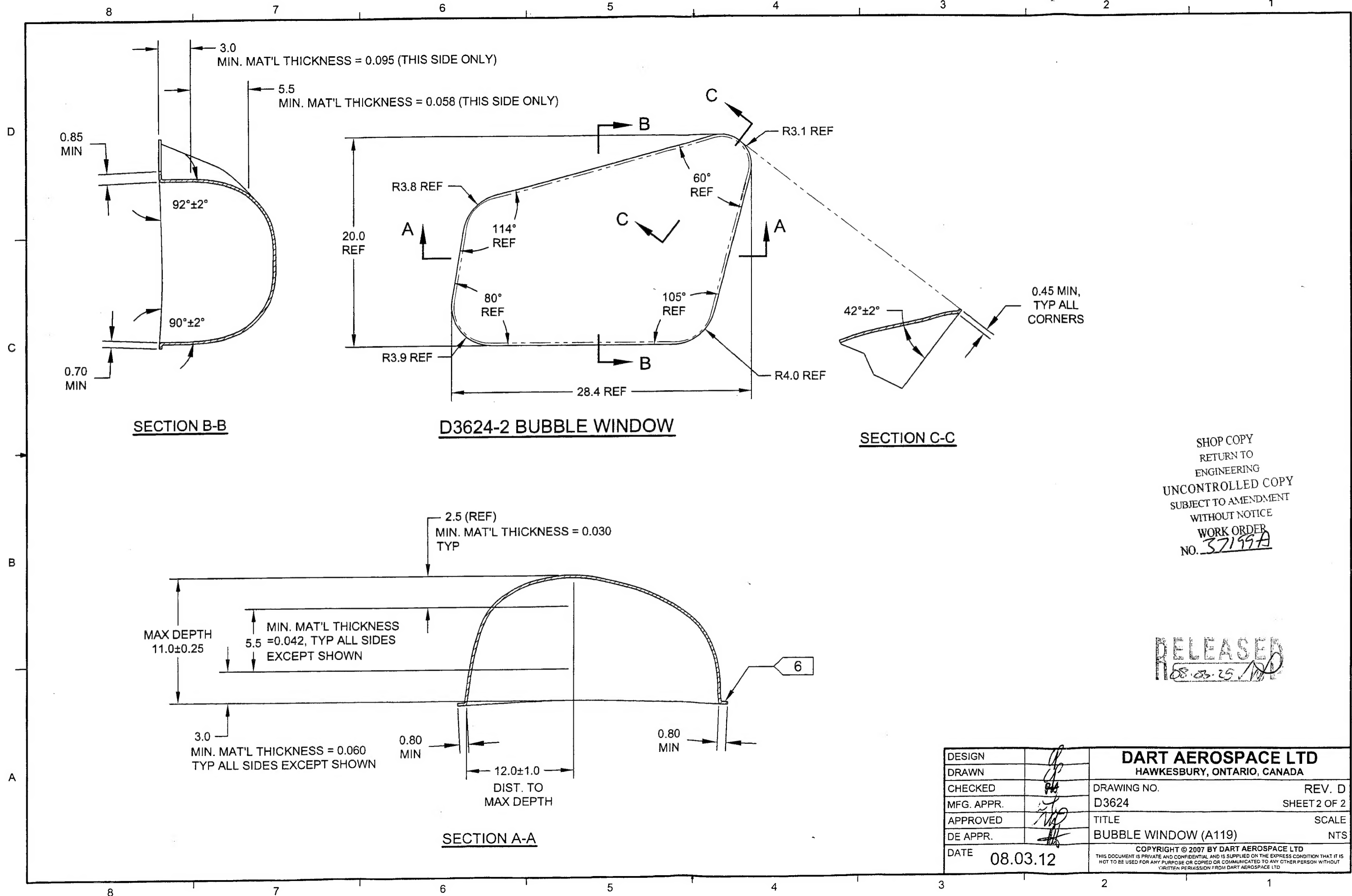
- 1) MATERIAL: PLEXIGLAS G CLEAR CAST ACRYLIC SHEET PER LP-391 TYPE 1 GRADE C  
OR POLYCAST II CLEAR ACRYLIC SHEET PER MIL-P-5425  
0.177 TO 0.188 THICK (STOCK, REF DART SPEC M-ACRYLIC-S)
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.010 TO 0.020 MAX
- 6) IDENTIFICATION: ENGRAVE P/N & B/N ON FLANGE WITHIN 0.25" OF BUBBLE. USE 0.125" LETTERS TO MAX DEPTH OF 0.005".
- 7) WEIGHT: 2.95 lbs
- 8) FORM PER DT8953 AND QSI 022  
FORMING PROCESS: (a) DRAPE OVER DT8953 MOLD  
(b) HEAT TO 290°F  
(c) VACUUM FORM TO SPECIFIED HEIGHT  
(d) LET COOL TO AT LEAST 100°F BEFORE HANDLING  
(e) TRIM FLANGE USING DT8954

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RELEASED  
11-03-25

D	REDRAW, REFORMAT, RMV SHAPE TOOL, ADD SEC B-B (2C8) & C-C (2C3), ADD FLANGE & WALL & WALL ANGLE DIMS, UPDATE MAT'L SPEC (1B8)	CP	08.03.12
C	ADD TOOL TO CONTROL BUBBLE SHAPE	CP	07.06.27
B	11.0" DEPTH WAS 12.0"	CP	07.05.24
A	NEW ISSUE	CP	07.06.27
REV.	DESCRIPTION	BY	DATE

DESIGN		<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE 08.03.12		DRAWING NO. D3624	REV. D SHEET 1 OF 2
		TITLE BUBBLE WINDOW (A119)	SCALE NTS
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Date: Wednesday, 23/04/2008 1:15:15 PM

User: Linda Lacelle

**JOB HISTORY : DETAIL**

<b>Job Number</b>	: 37199A	<b>Customer</b>	: Dart Helicopters Services
<b>Estimate Number</b>	: 12911	<b>DWG Name</b>	: A119 BUBBLE WINDOW
<b>Purchase Order #</b>	:	<b>Part Number</b>	: D36242
<b>Complete Date</b>	: 27/02/2008 11:59:59	<b>DWG Number</b>	: D3624 UNDER REVIEW
		<b>Rev.</b>	: REV. C
<b>DWDATE</b>	<b>ORDERED</b>	<b>DELIVERED</b>	
25/02/2008	3	3	
<b>1.0 MACRYLICS177-0.177" PLEXIGLAS G CLEAR CAST ACRYLIC SH</b>			
<b>DATE</b>	<b>EMPLOYEE</b>	<b>TYPE</b>	<b>Qty</b>
27/02/2008	DUBE01: Dube, Dominique	MACRYLICS177	40.000
<b>Subtotal:</b>	QTD:	0 CTD:	40
			\$226.30
<b>2.0 HAND FINISH TH Internal Operation</b>			
<b>DATE</b>	<b>EMPLOYEE</b>	<b>TYPE</b>	<b>Qty</b>
13/02/2008	BURY01: Bury, Bill	Run	0.000
21/02/2008	LEGE01: Leger, Daryl	Run	0.000
13/03/2008	LEGE01: Leger, Daryl	Run	0.000
17/03/2008	LEGE01: Leger, Daryl	Run	0.000
<b>Subtotal:</b>	QTD:	0 CTD:	0
			4.20
			\$244.31
<b>3.0 THERMOFORMING Internal Operation</b>			
<b>DATE</b>	<b>EMPLOYEE</b>	<b>TYPE</b>	<b>Qty</b>
21/02/2008	LEGE01: Leger, Daryl	Run	0.000
25/02/2008	BURY01: Bury, Bill	Run	0.000
11/03/2008	BURY01: Bury, Bill	Run	0.000
13/03/2008	BURY01: Bury, Bill	Run	0.000
13/03/2008	LEGE01: Leger, Daryl	Run	0.000
17/03/2008	BURY01: Bury, Bill	Run	0.000
17/03/2008	LEGE01: Leger, Daryl	Run	0.000
<b>Subtotal:</b>	QTD:	0 CTD:	0
			26.06
			\$1515.75
<b>4.0 QC2 Internal Operation</b>			
<b>DATE</b>	<b>EMPLOYEE</b>	<b>TYPE</b>	<b>Qty</b>
21/02/2008	LEGE01: Leger, Daryl	Run	0.000
13/03/2008	LEGE01: Leger, Daryl	Run	0.000
17/03/2008	LEGE01: Leger, Daryl	Run	0.000
<b>Subtotal:</b>	QTD:	0 CTD:	0
			2.25
			\$42.92
<b>5.0 HAND FINISH TH Internal Operation</b>			
<b>DATE</b>	<b>EMPLOYEE</b>	<b>TYPE</b>	<b>Qty</b>
22/02/2008	LEGE01: Leger, Daryl	Run	0.000
25/02/2008	BURY01: Bury, Bill	Run	0.000
25/02/2008	LEGE01: Leger, Daryl	Run	0.000
12/03/2008	BURY01: Bury, Bill	Run	0.000
14/03/2008	BURY01: Bury, Bill	Run	0.000
18/03/2008	LEGE01: Leger, Daryl	Run	0.000
18/03/2008	BURY01: Bury, Bill	Run	0.000
<b>Subtotal:</b>	QTD:	0 CTD:	0
			31.83
			\$1851.36

		<i><b>TIME</b></i>	<i><b>COST</b></i>	
	Machine Time:	64.34	\$2427.33	
	Labor:	64.34	\$1227.01	
	Sub-contract (external Op.):		\$0.00	
	INVENTORY ITEM:		\$226.30	
	SUB-COMPONENT (SUB-JOB):		\$0.00	
<b>Total:</b>			\$3880.64	

COST PER UNIT: \$1293.54